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EXAMINER

GILLIAM, BARBARA LEE

ART UNIT

PAPER NUMBER

1752

DATE MAILED: 05/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/977,278

Applicant(s)

KONDO, SHUNICHI

Examiner

Barbara Gilliam

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 April 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-6,9-13 and 15-19 is/are rejected.
- 7) ☒ Claim(s) 2,7,8,14 and 20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2,3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Japan on October 16, 2000. It is noted, however, that applicant has not filed a certified copy of the JP 2000-315393 application as required by 35 U.S.C. 119(b).

Claims

2. Claims 1-20 are present.

3. Claims 5 and 6 contain *product-by-process* limitations with respect to the compound having a nitrogen atom and an ethylenically unsaturated double bond. Applicant is reminded of the MPEP 2113, "Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 5-6, 9, 12, 16, 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Rode et al.

a. In US 4,983,498, Rode et al. claim a photopolymerizable mixture consisting essentially of a polymeric binder, an acrylate or alkacrylate or a polyhydric alcohol, comprising one or more groups which are photooxidizable on exposure in the presence of a photoreducible dye, and one or more urethane groups, a photoreducible dye as a photoinitiator component, a trihalomethyl compound, and an acridine, phenazine or quinoxaline compound which acts as a photoinitiator (claims 1 & 14). The acrylate or alkacrylate is a compound of formula (I) (claim 2). In Example 1, an electrochemically roughened and anodized aluminum support was coated with a solution comprising 2.84 pbw (64%) of a terpolymer as the polymeric binder, 1.49 pbw (33%) of an acrylate or alkacrylate monomer (compounds 1-4), 0.04 pbw (0.90%) of a photoreducible dye as a photoinitiator, 0.03 pbw (0.67%) of a triazine as the trihalomethyl compound and 0.049 pbw (1.1%) of 9-phenylacridine photoinitiator (column 11, lines 42-65 & column 4, line 37 – column 5, line 33). The photopolymerizable mixture of Example 1 meets the present limitations for the photosensitive composition of the present application wherein the polymeric binder meets the present limitations for the same, compounds 1-4 meet the present limitations for the compound having a nitrogen atom and an ethylenically unsaturated double bond and the photoreducible dye and 9-phenylacridine both meet the present limitations for the photopolymerization initiator. The roughened and anodized aluminum support

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meet the present limitations for the aluminum support. The plate of Example 1 was exposed using a metal halide lamp and developed with a developer comprising sodium metasilicate and 1.2 pbw polyoxyethylene ether (column 11, line 67 – column 12, line 17). The developing solution of Example 1 meets the present limitations for the developing solution of the present application wherein the sodium metal silicate meets the present limitations for the inorganic alkali agent and the polyoxyethylene ether meets the present limitations for the surface active agent.

6. The teachings of US 5,085,974 are cumulative to the teachings of US 4,983,498.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rode et al. in view of Sasayama et al.

a. As indicated in the corresponding rejection under 35 U.S.C. 102(b), Rode et al. (US 4,983,498) teach a photopolymerizable mixture consisting essentially of a polymeric binder, an acrylate or alkacrylate or a polyhydric alcohol, comprising one or more groups which are photooxidizable on exposure in the presence of a photoreducible dye, and one or more urethane groups, a photoreducible dye as a photoinitiator

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component, a trihalomethyl compound, and an acridine, phenazine or quinoxaline compound which acts as a photoinitiator (claims 1 & 14). The plate of Example 1 was exposed and developed with a developer comprising sodium metasilicate and 1.2 pbw (0.03 %) polyoxyethylene ether (column 11, line 67 – column 12, line 17). Rode et al. do not teach the required polyoxyethylene ether or the required amount of the polyoxyethylene ether.

b. In US 6,364,544 B1, Sasayama et al. claim a developing apparatus and a method of replenishing a replenisher for a developer in an automatic developing apparatus (claims 1-5). The type of plates that can be developed with this developer include negative working image materials and photopolymerizable printing plates (column 9, line 60 – column 10, line 38). The developer comprises an alkali agent (column 4, line 29 – column 5, line 53) and a surfactant such as an polyoxyethylene alkyl ether in an amount of 0.001 to 10% by weight of the developer (column 5, line 54 – column 6, line 56). The surfactant is used to promote development, disperse development scum, or to enforce the ink receptivity of the image area of the printing plate. The polyoxyethylene alkyl ether meets the present limitations for the nonionic surface active agent of formula (I).

c. Therefore it would have been obvious to one of ordinary skill in the art to make, expose and develop a photopolymerizable printing plate with a developer comprising an alkali agent such as sodium metasilicate and a polyoxyethylene alkyl ether surfactant in an amount of 0.001 to 10 % based on the teachings of Sasayama et al. with reasonable expectation of enforcing ink receptivity of the imaged areas of the printing plate wherein the photopolymerizable printing plate comprises an aluminum support

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and a photopolymerizable layer containing a polymeric binder, an acrylate or alkacrylate or a polyhydric alcohol, comprising one or more groups which are photooxidizable on exposure in the presence of a photoreducible dye, and one or more urethane groups, a photoreducible dye as a photoinitiator component, a trihalomethyl compound, and an acridine, phenazine or quinoxaline compound which acts as a photoinitiator based on the teachings of Rode et al.

9. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rode et al.

a. In US 4,983,498, Rode et al. teach a photopolymerizable mixture consisting essentially of a polymeric binder, an acrylate or alkacrylate or a polyhydric alcohol, comprising one or more groups which are photooxidizable on exposure in the presence of a photoreducible dye, and one or more urethane groups, a photoreducible dye as a photoinitiator component, a trihalomethyl compound, and an acridine, phenazine or quinoxaline compound which acts as a photoinitiator (claims 1 & 14). Rode et al. also teach the addition of a wide variety of substances as additives including dyes and colored pigments (column 8, line 67 - column 9, line 10). Therefore it would have been obvious to one of ordinary skill in the art to add dyes or colored pigments to the photopolymerizable composition of Rode et al. to provide a clear distinction between the image and background areas after exposure and development.

10. Claims 1, 3, 5, 9-10, 11-13, 15-16, 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuji et al.

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a. In US 6,514,668 B1, Tsuji et al. teach a photosensitive lithographic printing plate having a photosensitive resin layer formed on an aluminum substrate subjected to electrolytic surface roughening and anodic oxidation treatment, wherein the photosensitive resin layer is made of a photopolymerizable composition comprising an addition-polymerizable ethylenically unsaturated bond-containing monomer also containing a phosphate compound having at least one (meth)acryloyl group, a photopolymerization initiator and a polymer binder (abstract). It is preferred to use a polyfunctional ethylenic monomer having two or more ethylenically unsaturated bonds in one molecule together with the phosphate compound having at least one (meth)acryloyl group (column 4, lines 15-18). Examples of the polyfunctional ethylenic monomer include urethane (meth)acrylates obtainable by reacting a polyisocyanate compound with a hydroxy group-containing (meth)acrylate used in an amount of 20 to 70-wt. % based on the entire ethylenic monomer (column 4, line 57-column 5, line 25 & column 12, lines 37-48). The polymer binder to be used is preferably an alkali soluble polymer with carboxyl groups in its molecule such as a homopolymer or copolymer of (meth)acrylic acid. The preferred acid value of the polymer binder having carboxyl groups in the molecule is from 10 to 250 and a preferred weight average molecular weight is from 5,000 to 500,000 (column 6, lines 45-63). The polymeric binder is used in an amount of 10 to 400 parts by weight relative to 100 parts by weight of the polymerizable ethylenic monomer (column 12, lines 37-48). The polymeric binder of Tsuji et al. meet the present limitations for the polymer binder of the present application specifically the addition polymer binder having a carboxylic acid group in the side chain. Titanocene or hexaarylbiimidazole is preferred as the photopolymerization initiator

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because the sensitivity, storage stability and the adhesion are good (column 5, lines 25-44 & column 12, lines 37-48). The titanocene initiator meets the present limitations for the same. The photopolymerizable composition may also contain a coloring agent comprising an organic or inorganic dye or pigment (column 12, lines 49-55) which meets the present limitations for a coloring agent. The roughened and anodized aluminum plate meets the present limitations for the same (column 12, line 66 – column 13, line 36). After the plate is image wise exposed, it is then developed with an aqueous solution containing a surfactant and an alkali to form an image. Suitable alkali agents include inorganic alkali agents and suitable surfactants include polyoxyethylene alkyl ether (column 13, line 55 – column 14, line 14).

b. Therefore it would have been obvious to one of ordinary skill in the art to make, image and develop a photosensitive lithographic printing plate with a developer comprising an inorganic alkali agent and a polyoxyethylene alkyl ether surfactant wherein the photosensitive printing plate comprises a photosensitive resin layer formed on a roughened and anodized aluminum substrate and the photosensitive resin layer is made of an addition-polymerizable ethylenically unsaturated monomer containing a phosphate compound having at least one (meth)acryloyl group, a polyfunctional monomer containing urethane (meth)acrylate, a titanocene photopolymerization initiator and a polymer binder comprising carboxyl groups based on the teachings of Tsuji et al. with reasonable expectation of obtaining a photopolymerizable printing plate with excellent printing resistance (column 2, lines 41-45).

Allowable Subject Matter

11. Claims 2, 7-8, 14 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

12. The following is a statement of reasons for the indication of allowable subject matter:

a. With respect to claims 2 and 20, there is no teaching or suggestion of the optimal electric conductivity of the developers in Rode et al., Tsuji et al. or Sasayama et al. (US 6,364,544 B1). The teachings of Sasayama et al. are concerned with electric conductivity and pH of the developer but fail to provide teach an optimal working range of electric conductivity (column 2, lines 6-20). With respect to claims 7 and 8, there is no teaching or suggestion in Rode et al (US 4,983,498) or Tsuji et al. (US 6,514,668 B1) of an ethylenically unsaturated compound having a nitrogen atom that is an amide of an unsaturated carboxylic acid with an aliphatic polyamine compound or an ester of an unsaturated carboxylic acid and an aliphatic polyhydric alcohol compound as required in the present application. Specifically in Rode et al. hydroxy group-containing esters are intermediate compounds and are reacted with diisocyanates (column 4, lines 37-68). With respect to present claim 14, there is no teaching or suggestion in Rode et al. or Tsuji et al. of a cellulose polymer binder.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. In US 6,315,467 B1, Oishi et al. teach a method for developing a material having photosensitive resin composition (abstract).

b. In US 5,837,425, Nakanishi et al. teach a developer suitable for both positive working and negative working photosensitive lithographic printing plates (abstract).

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Barbara Gilliam whose telephone number is 703-305-1330. The examiner can normally be reached on Monday through Friday, 8:00 AM - 6:00 PM.

a. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Janet Baxter can be reached on 703-308-2303. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

b. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

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Barbara Gilliam

Barbara Gilliam
Examiner
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May 5, 2003